

### ABSTRACT OF THE DISCLOSURE

A closed loop three color alignment system for a digital projector comprises a light source and an optical engine (50) which splits a beam of light from the light source into first, second, and third wavelength bands. A first, second, and third spatial light modulator (11, 12, 16) imparts image data and a first, second, and third fiducial data to the first, second, and third wavelength bands. A combiner combines the modulated first, second, and third wavelength bands. A diverter diverts a portion of the combined modulated wavelength bands to a sensor. The sensor (21) senses a relative position of each of the fiducials and sends the position information to a microprocessor. The microprocessor then determines an error based on the relative position of the fiducials. The microprocessor then sends a signal to at least one component of the system to resolve the error.

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